

**NATIONAL
WEATHER
SERVICE,
ALBUQUERQUE**



New Mexico

Skywatcher

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**INSIDE THIS
ISSUE:**

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Co-op Corner: *It's that time of year again, funnels go out snowboards come in. Some friendly reminders for Spring and Summer.*

Outreach: *Are you a weather watcher? NWS Albuquerque SKYWARN Spotter training schedule is out!*

El Niño Explained: *What is El Niño and why does it matter to New Mexicans? An NWS Albuquerque forecaster breaks it down.*

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Getting Prepared

Welcome to the Spring 2014 edition of the Skywatcher newsletter distributed by the National Weather Service office in Albuquerque. As we head into the warmer, windy weather of the Spring months and the nearly daily showers of the summer thunderstorms we have a few reminders and some information on upcoming events. Inside this issue there is a note from Tim, our resident HAM radio operator with some exciting equipment news. We also have a message for our cooperative weather observers as we head into the warm season. Now that severe weather is not far off we have been busy giving SKYWARN spotters presentations across the state. If you or someone you know is interested in increasing your weather knowledge, check out page 3 to learn about attending a session. Here at the National Weather Service in Albuquerque we pride ourselves on the relationship that we maintain with our partners/customers and the public. In addition to numerous outreach activities we do statewide every year there is a new way that you and your community can participate in community preparedness activities. America's *PrepareAthon!* is being held at the end of this month and could lead to a greater understanding on preparing for weather emergencies. Most people are familiar with the term El Niño and La Nina, now that an El Niño watch has been issued what are the implications? On pages 4 and 5 one of our forecasters will de-mystify El Nino with an explanation of what it is and what that means for us. In this issue we honor one institution and one individual who have loyally been taking temperature and precipitation observations for our office. On page 7 we take a look at April 2013 vs April 2014 and how drought has changed, if at all. You might be surprised at what difference one year makes. To wrap everything up we take a look at some winter season snowfall totals as well as low temperatures across

Author: Amanda Martin

The Radio Room

Here at WX5ABQ, we've picked up our grounding wire, and thrown a whole new amateur radio station underneath! In the wake of our antenna collapse last summer, we've assembled a nifty off-center fed dipole that should give us solid radiation angles and good reliable communications. But - the best news - is what we now have attached to the other end of the coax! All hams know the pleasure I had a couple of days ago: pulling a brand-new HF transceiver, automatic antenna tuner, and power supply out of their boxes and setting them up in our operations area. A few adjustments on the antenna hardware, and we should be on the air about the time you're reading this. This is the fulfillment of a major vision for WX5ABQ, and I personally look forward to many hours of good operating - and good QSOs with you - down in the HF range. None of this, of course, means we'll be any less active on the VHF and UHF bands, where our access to the MegaLink wide-area repeater and many local repeaters will still be the bread-n-butter link to our many spotter groups. And speaking of spotter groups - we're on the road this spring and summer to provide another round of SKYWARN spotter training! We'll look forward to seeing you in person at a session near you. See you on the bands!



73 de Tim KM4KS, Trustee WX5ABQ

Co-op Corner

GOING
PAPERLESS!



IV-ROCS

SNOWBOARDS
IN, FUNNELS
OUT!



A MESSAGE TO OUR COOPERATIVE OBSERVERS

Another Winter has come and gone where snowfall amounts disappointed us all. But with Spring and Summer comes hope and renewed vigor to observe much needed rainfall! So as we transition from snowfall measuring to rainfall recording, here are some reminders for our observers. For those of you with a standard 8-inch rain gauge, it's time to place the inner measuring tube and funnel inside the gauge. This will make observing easier and ensure the most accurate measurements by preventing moisture inside the gauge from evaporating.

As we head into our spring and summer thunderstorm/monsoon season, you can be of great assistance to the National Weather Service in Albuquerque by reporting severe weather conditions in your area, as well as rainfall totals. Please report any sightings of funnel clouds, wall clouds, tornadoes, strong winds, wind damage, large hail, or flooding to our office at 1-888-386-7637. Your information will help forecasters make life saving decisions and verify warnings. Please don't forget to enter this information on your B91, B92, or B83a forms. You can find instructions and examples on the inside cover of the forms. If you are in need of supplies, please contact our office.

We also have a few reminders on reporting for our observers. First, we want to thank everyone for their prompt return of the observation data at the beginning of each month. By sending in your monthly forms before the 5th of each month, it allows our staff to check the data in a timely fashion before sending it to the National Climatic Data Center (NCDC). If you haven't been as timely, it would be of great assistance to our staff by using the 5th of each month as the time to send in your data. This will help avoid incessant calls from us asking to collect the data! Second, we want to remind our observers to send in all the data you have. If you have an FPR-E digital rain gauge, make sure to deliver the text file either by email (sr-abq.coop@noaa.gov) or by mail. Also, don't forget to continue recording your daily weather observations on your B-91, B-92 or B83a forms and send us that data as well.

We are still continuing our effort to go paperless with our coop observations. "Going paperless" means you will enter your temperature and precipitation readings in an online form (either WXCODERIII or IV-ROCS) and will no longer need to mail in a paper form at the end of every month. From the online site we are able to access the data here at the office while directly downloaded to NCDC. For FPR-E rain gauge sites, this means emailing the text file on the USB drive by email. The stations listed below went paperless almost three years ago; these sites no longer need to mail a paper form to the NWS office at the end of the month. We do realize that some stations will not be able to go paperless for various reasons. If you are an observer at a station that is not yet paperless and would like to become paperless, or if you have any other questions or comments, please don't hesitate call us at 505-243-0702.

* ABQ Foothills * ABQ Valley * Alcalde * Angel Fire 1S * Augustine * Aztec Ruins
* Bitterlakes * Bloomfield 3SE * Bonito Dam * Canjilon R/S * Chaco Canyon * Cimarron
4SW * Clayton 1N * Clovis 13N * Conchas Dam * Corona 10SW * Corrales * Cubero
* Dulce * Duran * Eagle Nest * El Morro N/M * El Rito R/S * El Vado Dam * Estancia 7
NE * FMN Ag Sci Center * Ft. Sumner 5S * Gallup S/G * Ghost Ranch * Glenwood
* Golden * Gran Quivira * Grants A/P * Jemez Spring * Johnson Ranch * Los Alamos *
Los Lunas 3SSW * Luna R/S * Maxwell * Melrose * Moriarty 1NE * Mountainair R/S *
Mountainair 8NW * Narbona Pass * Navajo Dam * Otis * Pasamonte * Pecos N/M * Ped-
ernal 9E * Petroglyph N/M * Picacho 2WSW * Portales * Quemado R/S * Ragland
3SSW * Raton Filter Plant * Raton Radio * Red River * Reserve R/S * Rio Rancho 1 *
Rio Rancho 2 * Rosebud * Roswell Climat * Roswell North * San Jon * Santa Fe 2 * San-
ta Fe Seton * Socorro * Torreon Navajo Mission * Tucumcari 4 NE * Ute Dam * Wolf
Canyon

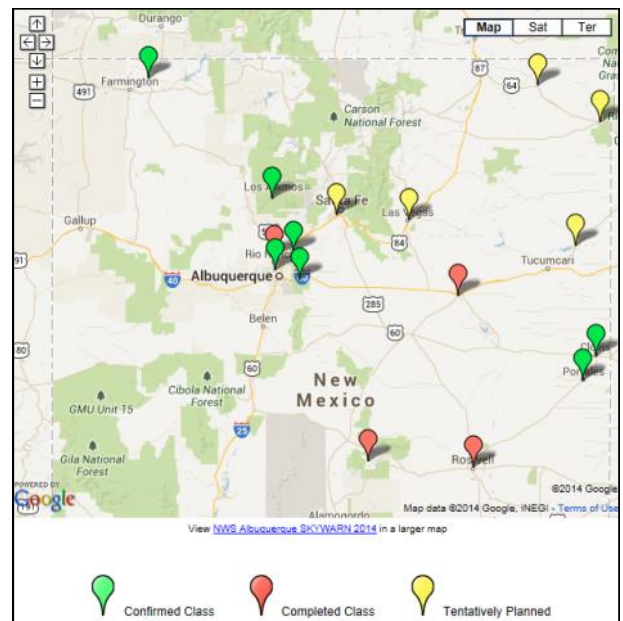
Author: Jason Frazier

SKYWARN Spotter Training

The National Weather Service (NWS) works closely with emergency managers and officials across New Mexico to organize and schedule spotter training classes each year. The sessions are free and the public is invited. SKYWARN training lasts 2 to 2.5 hours and include the basics of thunderstorm development, severe thunderstorm structure, storm spotting techniques and procedures, as well as hazardous weather safety and preparedness information. NWS operations and procedures to include amateur radio nets are also discussed. Each class is tailored to your local area.

SKYWARN spotters play a critical role in National Weather Service severe weather operations. The purpose of these sessions is to train members of the general public to recognize and report severe weather. Persons already participating in the SKYWARN program are encouraged to attend as well.

If you have any questions concerning the SKYWARN program, contact the National Weather Service in Albuquerque at 1-888-386-7637. You can also learn more about SKYWARN on the web at www.weather.gov/abq and click on the SKYWARN link on the left menu.



Next class is scheduled for April 24th at 6:00pm in Tijeras, NM at the James McGrane Public Safety Complex.

Author: Amanda Martin

America's PrepareAthon!

America's PrepareAthon! is a nationwide, community-based campaign for action to increase emergency preparedness and resilience through hazard-specific drills, group discussions and exercises conducted at the national level every fall and spring. The first National Day of Action is scheduled for April 30, 2014 and will revolve around taking the actions to prepare for these four specific hazards: Tornadoes, Wildfires, Floods and Hurricanes.

The goal of this campaign is to increase the number of individuals who:

- Understand which disasters could happen in their community
- Know what to do to be safe and mitigate damage
- Take action to increase their preparedness
- Participate in community resilience planning

Starting on March 31, 2014 register to participate in America's PrepareAthon! and provide details about the activities you're planning. Plan your own local community or organizational preparedness event. Participate in discussion forums online with like-minded community members. Learn the actions to take for disaster preparedness and practice them!

More info can be found at <http://community.fema.gov/connect.ti/AmericasPrepareathon/view?objectId=217843>



Author: Kerry Jones

El Niño Explained

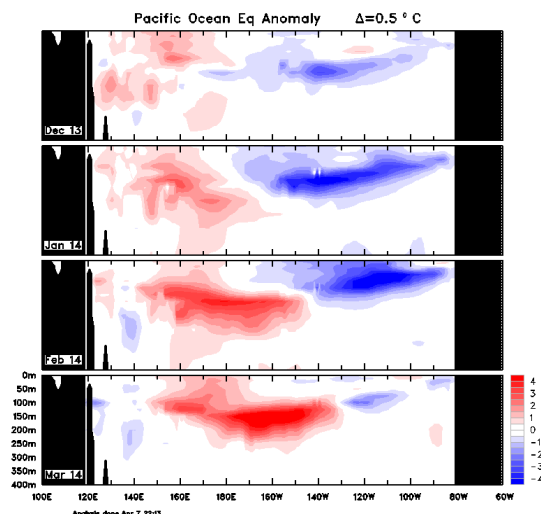
El Niño , it is a word we often hear used when describing the weather. Although most people understand it means there will be a difference in precipitation across the state, there is more to the El Niño climate and how it will impact New Mexico. In the article below, an NWS ABQ forecaster will compare this year's forecast to previous years of El Niño, look at impacts to specific locations, and explain what other surprises may be in store for this Summer and the following Winter.

Why do we think a strong El Niño is likely in our near future and how might it influence weather in New Mexico? Will this be your grandfather's El Niño?

El Niño is a massive tongue of abnormally warm Pacific Ocean surface water extending along the equator westward from the South American coast. The warmer than average surface waters result in strong thunderstorm development in the equatorial regions of the Pacific Ocean which typically bring the jet stream and the associated storm systems farther south, making it more favorable for precipitation production over western and southwestern United States, including New Mexico. El Niño typically is very good news for New Mexico, particularly after one of, if not the most severe drought during the past 120 years. On average, El Niño years equate to above average precipitation throughout the state. Areas south of Interstate 40 benefit the most as the sub-tropical jet stream strengthens a great deal, transporting abundant sub-tropical moisture to this part of the state. There was, however, something markedly different about the strongest recorded El Niño event of 1997-98 when compared with other moderate to strong El Niños of the 1970s and 1980s. What changed? For the first time since the late 1960's, the North Atlantic sea surface temperatures warmed to above average levels in 1995. Whether this was due, in part, to climate change or was the typical oscillation between warm and cold phases is up for debate but the fact remains that the Atlantic Basin, which affects upstream weather patterns that make a major difference in the strength and duration of storm systems over the western United States, was above average.

What changed to indicate El Niño might be coming?

Climate scientists monitor ocean temperatures from the surface down to about 1500 feet in the equatorial Pacific Ocean very closely. Since January 2014, an enormous area of warm water approximately 300-500 feet below the ocean surface has been growing rapidly (see image below).



Sub-surface ocean temperatures since January, 2014; courtesy Australian Bureau of Meteorology. The red areas indicate a large area (equivalent to the size of the lower 48 states) of above average ocean temperatures primarily between 300 and 500 feet below the ocean surface. Very similar conditions were observed prior to the strong El Niño of 1997-98.

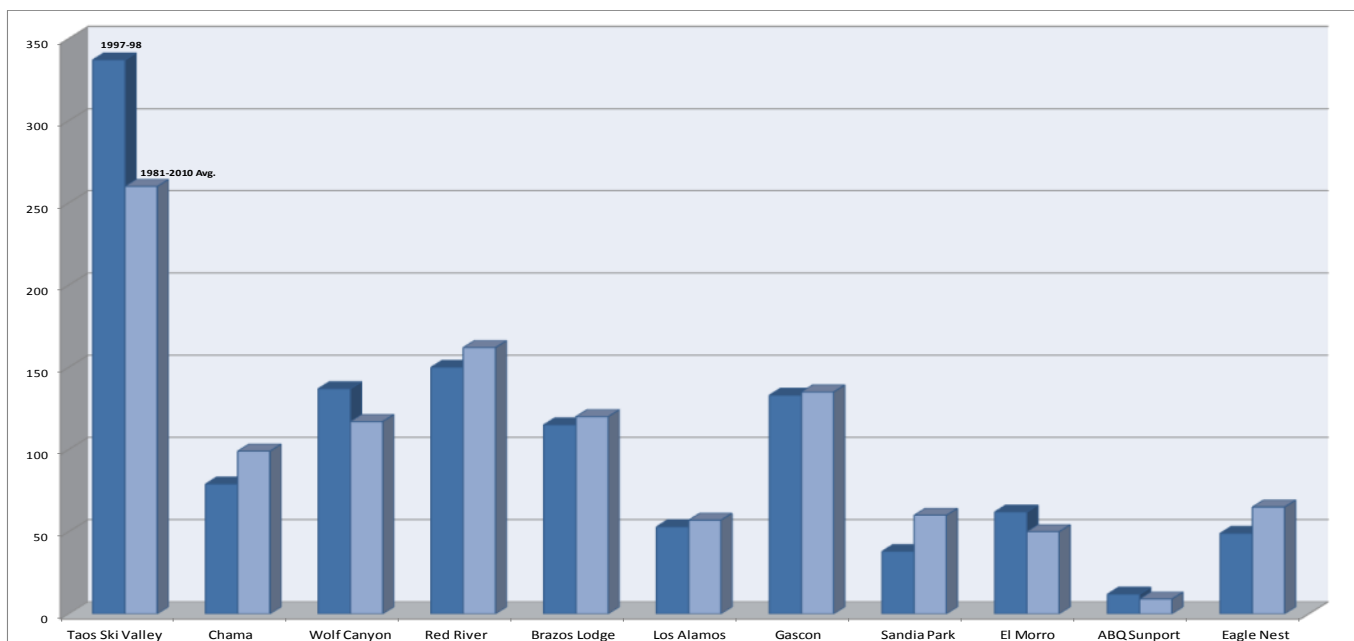
Fog bank west of Roswell. Taken 2/5/14 courtesy of Trieva Rue.

Final evening of daylight savings time taken in Pleasanton courtesy of David Thornburg.

El Niño Explained Continued...

In 1997, very similar sub-surface and surface conditions (sub-surface water temperatures and surface winds) resulted in the strongest/warmest El Niño ever recorded. Strong El Niños characteristically favor the southern half or so of New Mexico with slightly less impact on precipitation in the north. Since the strong 1982-83 El Niño, connections between sea surface temperatures and precipitation are highest south of Interstate 40. The 1997-98 El Niño did result in above average precipitation for many sites in New Mexico but not the widespread well above average precipitation expected at the time. For example, from 1981 through 2010, Socorro averaged 3.78" from October through April. In the 1997-1998 Oct-Apr period, 4.54" of precipitation was measured. To add some perspective, during October 2013 through April 2014, only 1.0" has been measured in Socorro. In Ruidoso, the average Oct-Apr precipitation from 1981-2010 is 5.14". 1997-98, 7.95" fell in Ruidoso during the Oct-Apr period. Farther north in Albuquerque, the 1981-2010 Oct-Apr average is 2.67" and in 1997-98 5.83" fell at the Albuquerque Sunport between October 1, 1997 and April 30, 1998. Again, for perspective, since October 2013, 1.86" has fallen at the Albuquerque Sunport. At Wolf Canyon in the western Jemez Mountains approximately 6 miles northwest of Fenton Lake State Park, 10.15" fell from October 1997 through April 1998. The 30-yr climatological average at Wolf Canyon from 1981-2010 is 12.05". Only 2.18" of precipitation has fallen since October 2013.

Switching gears a bit to snow, Taos Ski Valley recorded 333" of snow from October 1997 through April 1998. The 30-yr climatological average from 1981-2010 is 260". The graph below provides a look at snowfall during the strong El Niño of 1997-98 at selected locations in central and northern New Mexico and compares them with the 1981-2010 averages.



While the 1997-98 strong El Niño did not bring widespread well above average precipitation to the entire state, it did bring near average to slightly above average precipitation amounts to the vast majority of locations in central and northern New Mexico. This is welcomed news with the past 4 years as dry or nearly as dry as any 4 year period since 1872. Additionally, monsoon seasons at most locations in central and northern New Mexico during moderate to strong El Niños with early onsets (between April and June) experienced above to well above average precipitation from July 1 through September 15.

For more information or to check out the latest ENSO watch you can visit the Climate Prediction Center page at <http://www.cpc.ncep.noaa.gov/> or the NOAA El Nino page at <http://www.elnino.noaa.gov/>.

Author: Andrew Church

**COOPERATIVE
OBSERVER
SERVICE
AWARDS:**

- **Sam Britt**
Pasamonte
55 Years of Service
- **Diana Rush**
Ragland
30 Years of Service
- **Carmichael**
Laiwakete
Zuni
25 Years of Service
- **Linda Lloyd**
Thoreau
20 Years of Service
- **Clint Janes**
Socorro
15 Years of Service
- **Ellen Vaughan**
Fort Sumner
15 Years of Service
- **Vivian Culbertson**
Rosebud
10 Years of Service
- **Robert Corn**
Roswell
10 Years of Service

Meet Your Observers: Award Recognitions

Throughout the year the Co-op Team at the National Weather Service in Albuquerque recognizes many of their observers for their outstanding work. Not only have individuals from the public volunteered their time to take daily weather observations but some institutions have as well. We are proud of the service you provide our nation, and we want to acknowledge your hard work.

-Institutions-

El Morro National Monument



The National Park Service Office in El Moro, New Mexico was recently presented with a 75 year Length-of-Service Award. The award is given out in recognition of the diligence and loyalty of the park rangers in observing the weather and measuring temperature and precipitation data on a daily basis for over 75 years. Pictured accepting the award is Ranger Wendy Gorge.

-Individuals-

Bingham

The Patterson's in Bingham, New Mexico were recently presented with a 30 year Length-of-Service Award. Mariann and her husband Jim were given this award in recognition of their loyalty and hard work in observing the weather on a daily basis for over 30 years. They provide the NWS in Albuquerque, as well as the nation, with important climate information for this location. Pictured accepting the award is Jim Patterson.



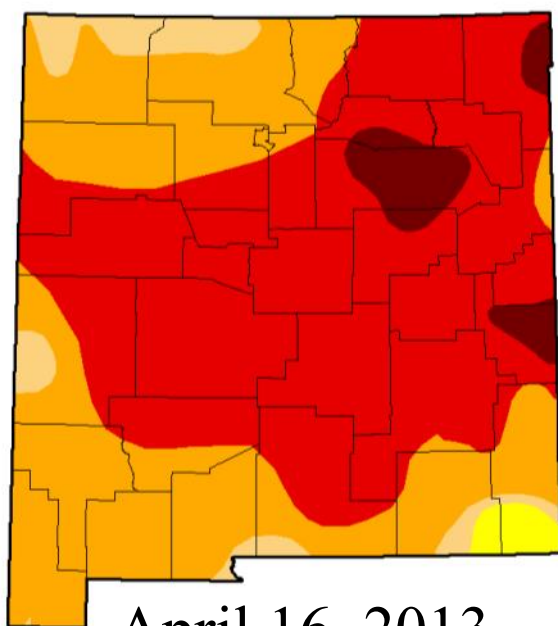
Author: Troy Marshall

Drought Comparison



You can see just from a glance that we have improved in drought category from mid-April 2013 to mid-April 2014. The coverage of exceptional drought (D4), has decreased from seeing pockets across the eastern plains and eastern border in 2013 to only a slight inching in along the border for 2014. The percent of coverage decreased from 4 to under 1%. Extreme drought (D3), also significantly decreased from covering most of eastern and central New Mexico to mainly northeast areas, going from 59 to 25%. Most areas stayed in Severe Drought (D2) with that category roughly 20% lower than 2013. The Moderate Drought (D1) and Abnormally Dry (D0) categories were almost unchanged. Last year every single area in New Mexico was in some degree of drought, this year, there is a ½% that is not considered to be in drought. Not a huge win but at least it's something! For more information on drought conditions you can visit the NWS ABQ Drought page at <http://www.srh.noaa.gov/abq/?n=drought> or the Drought Monitor at <http://droughtmonitor.unl.edu/Home/StateDroughtMonitor.aspx?NM>.

Author: Amanda Martin

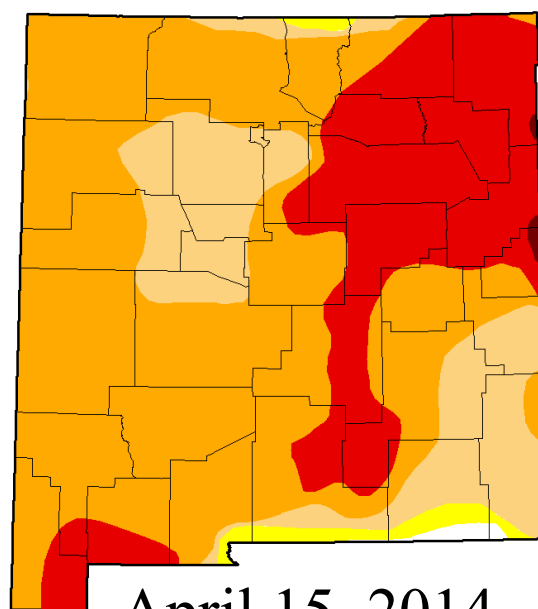


April 16, 2013

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	98.68	93.95	58.73	4.36
Last Week 4/9/2013	0.00	100.00	98.68	93.30	58.73	4.36
3 Months Ago 1/15/2013	0.00	100.00	98.45	92.97	31.76	0.97
Start of Calendar Year 1/1/2013	0.00	100.00	98.83	94.05	31.88	0.97
Start of Water Year 9/25/2012	0.00	100.00	100.00	62.56	12.25	0.66
One Year Ago 4/17/2012	0.00	100.00	86.48	58.54	24.94	8.86

Author:
David Miskus
NOAA/NWS/NCEP/CPC



April 15, 2014

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.50	99.50	97.47	79.77	24.86	0.22
Last Week 4/8/2014	0.49	99.51	97.49	68.38	24.62	0.00
3 Months Ago 1/14/2014	0.39	99.61	79.94	33.13	3.97	0.00
Start of Calendar Year 12/31/2013	0.39	99.61	75.21	32.68	3.96	0.00
Start of Water Year 10/1/2013	1.66	98.34	74.92	37.81	3.39	0.00
One Year Ago 4/16/2013	0.00	100.00	98.68	93.95	58.73	4.36

Author:
Brian Fuchs
National Drought Mitigation Ctr

Are you involved in Social Media? Check us out at Facebook, Twitter, and YouTube.



By the Numbers



The 2012–2013 winter season brought mostly below normal snowfall, similar to the 2011–2012 winter season. Let's take a look at the top five snowfall totals from our Cooperative Observers:

Location	Snowfall (Oct.-March)	Co-op Observer
Red River	102.0 inches	Cathy Lexa
Chama	96.5 inches	U.S. Bureau of Reclamation
Wolf Canyon	96.0 inches	Carolyn Melgard
Angel Fire	71.0 inches	City Hall
Eagle Nest	51.5 inches	Ernest Sutliff

Much of the 2012–2013 winter had above normal temperatures once again, although January was below normal over most of the state. The first half of January 2013 was particularly cold with numerous record lows on the morning of the 15th. The four coldest spots for this past winter season are listed below:

Location	Temperature	Co-op Observer
Eagle Nest	-35 °F	Ernest Sutliff
Angel Fire	-30 °F	City Hall
Dulce	-27 °F	BIA - Forestry
El Vado Dam	-25 °F	U.S. Bureau of Reclamation - Chama



Photo courtesy of Todd Shoemaker. Taken on November 24, 2013. View of the west slopes of the Sandia Mountains.

Author: Chuck Jones

**National Weather Service,
Albuquerque**

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Would you like to receive notice of future issues?

The New Mexico Skywatcher will be available on your NWS website at <http://www.weather.gov/abq>. If you would like to be notified of new issues via email, submit your request to sr-abq.webmaster@noaa.gov (make sure to state your name and email address).